

IN THE ABSTRACT

Title: METHOD OF CALIBRATING A SPECTROSCOPIC DEVICE

The present invention provides a method of calibrating a spectroscopic device for providing a non-invasive measurement of an analyte level in a sample. The method comprises the steps of: (a) providing a plurality of calibration algorithms; (b) taking a set of non-invasive measurements on said sample with said spectroscopic device; (c) calculating a predicted set of analyte levels for each of the calibration algorithms in response to the set of non-invasive measurements, each of the predicted sets of analyte levels being characterized by a variability range, a slope, an R^2 (a square of the correlation between said set of non-invasive measurements and said predicted set of analyte levels), and a standard error of prediction; and (d) selecting an appropriate calibration algorithm by using a suitability score based on the variability range, the slope, the R^2 and the standard error of prediction for each of the predicted sets of analyte levels. A method of generating suitable calibration algorithms in step (a) is also provided.

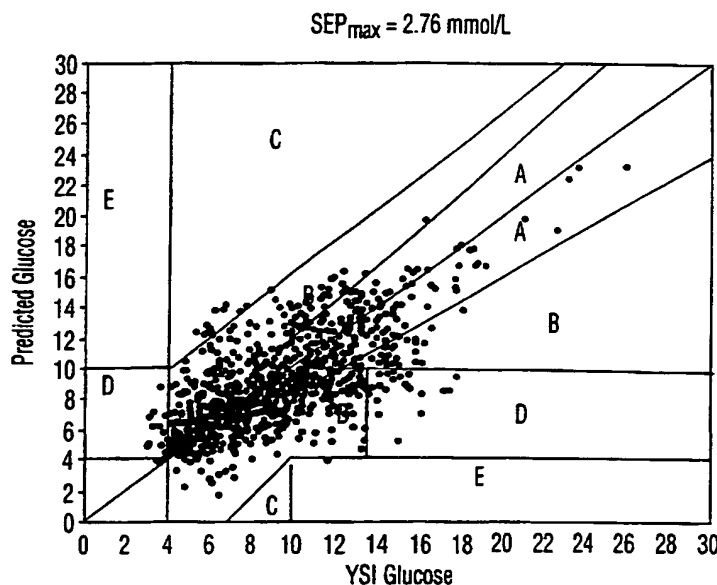
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
8 March 2001 (08.03.2001)

PCT

(10) International Publication Number
WO 01/16579 A1

- (51) International Patent Classification⁷: **G01N 21/35** E. [CA/CA]; 13 Elgin Street East, Conestogo, Ontario N0B 1N0 (CA).
- (21) International Application Number: **PCT/CA00/01005**
- (22) International Filing Date: **31 August 2000 (31.08.2000)** (74) Agent: **BERESKIN & PARR**; 40 King Street West, 40th floor, Toronto, Ontario M5H 3Y2 (CA).
- (25) Filing Language: **English** (81) Designated States (*national*): **CA, JP, US.**
- (26) Publication Language: **English** (84) Designated States (*regional*): **European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).**
- (30) Priority Data: **60/151,536** 31 August 1999 (31.08.1999) **US**
- (71) Applicant (*for all designated States except US*): **CME TELEMETRIX INC. [CA/CA]; 560 Parkside Drive, Waterloo, Ontario N2L 5Z4 (CA).** Published:
— *With international search report.*
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): **CADELL, Theodore,** For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **METHOD OF CALIBRATING A SPECTROSCOPIC DEVICE**

(57) Abstract: The present invention provides a method of calibrating a spectroscopic device for providing a non-invasive measurement of an analyte level in a sample. The method comprises the steps of: (a) providing a plurality of calibration algorithms; (b) taking a set of non-invasive measurements on said sample with said spectroscopic device; (c) calculating a predicted set of analyte levels for each of the calibration algorithms in response to the set of non-invasive measurements, each of the predicted sets of analyte levels being characterized by a variability range, a slope, an R^2 (a square of the correlation between said set of non-invasive measurements and said predicted set of analyte levels), and a standard error of prediction; and (d) selecting an appropriate calibration algorithm by using a suitability score based on the variability range, the slope, the R^2 and the standard error of prediction for each of the predicted sets of analyte levels. A method of generating suitable calibration algorithms in step (a) is also provided.

WO 01/16579 A1